

# **MULTIMEDIA APPLICATIONS II**

## **Curriculum Content Frameworks**

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# Curriculum Content Frameworks

## MULTIMEDIA APPLICATIONS II

Grade Levels: 11, 12  
Course Code: 492370

Prerequisite: Keyboarding  
Word Processing I & II ( or Computer Business Applications)  
Desktop Publishing I  
Multimedia Applications I

Course Description: Multimedia Applications II is a one-semester course giving students advanced experience in using multimedia to merge text and graphics, as well as in editing and dubbing video and sound. Applied principles are used to analyze and organize information, set up a design structure, and produce special visual expressions. Students will be able to develop an interactive multimedia presentation with academic core integration.

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# Unit 1: Video - Preproduction

## Hours: 10

Terminology: Backlight, Footage, Panning, Preproduction, Script, Storyboard, Tilting, Tripod, Video camera, Videographer, White balance, Zooming

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
1.1 Explain the basic parts/features of a video camera and related devices	1.1.1 Label the basic parts of the video camera	Foundation	Listening  Reading   Science	Listens to follow directions [1.2.6]  Reads and follows instructions to operate technical equipment [1.3.19]  Uses appropriate materials and techniques as specified [1.3.20]  Applies knowledge to complete a practical task [1.4.3]
1.2 Discuss the steps and techniques involved in preproduction	1.2.1 Create a storyboard for a video 1.2.2 Create a script for a video 1.2.3 Select appropriate equipment and prepare equipment for video-taping <ul style="list-style-type: none"> <li>• camera</li> <li>• tripod</li> <li>• storage media</li> <li>• microphone</li> <li>• lights (optional)</li> </ul> 1.2.4 Record a video from a storyboard	Foundation  Thinking	Science  Creative Thinking   Seeing Things in the Mind's Eye	Uses equipment and techniques to set up a video camera [1.4.23]  Combines ideas or information in a new way [4.1.2]  Creates new designs by applying specified criteria [4.1.3]  Visualizes a finished product [4.6.4]

## Unit 2: Video - Production

### Hours: 25

**Terminology:** Aspect ratio, Chroma key, Codec, Cuts, Duration, Fading, Frame, Frame rate, Frame size, Frames Per Second (FPS), Import, Linear editing, National Television Standard Committee (NTSC), Nonlinear editing, Phase Alternation Line (PAL), Production, RCA cable, Render, Scrubbing, Superimpose, Timeline, Title, Transition, Video capture, Video editing, Video Home System (VHS) tape, Voice overlay

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce				
Knowledge		Application		Skill Group	Skill	Description
2.1	Discuss the concepts of video capture	2.1.1	List the sources of video capture	Foundation	Listening	Listens for content [1.2.3]
		2.1.2	Capture a video clip		Reading	Applies/Understands technical words that pertain to subject [1.3.6]
		2.1.3	Import a captured video clip into a multimedia project			Comprehends written specifications and applies them to a task [1.3.9]
2.2	Discuss appropriate file settings for creating video	2.2.1	Specify the appropriate file settings for creating video <ul style="list-style-type: none"><li>• frame size</li><li>• frames per second</li><li>• file compression</li><li>• sound settings</li></ul>	Foundation	Science	Applies knowledge to complete a practical task [1.4.3]
					Writing	Applies/Uses technical words and concepts [1.6.4]
2.3	Discuss the types of software used for video production/editing	2.3.1	Identify software packages available for video production/editing	Foundation	Listening	Comprehends ideas and concepts related to video production/editing software [1.2.1]
		2.3.2	Create a video applying titles, special effects, transitions, etc.		Reading	Uses appropriate materials and techniques as specified [1.3.20]
					Science	Applies knowledge to complete a practical task [1.4.3]

## Unit 3: Video - Postproduction

### Hours: 5

**Terminology:** Audio Video Interleave (AVI), Firewire, Motion Picture Experts Group (MPEG), MOV, Postproduction, S-video, Universal Serial Bus (USB), Windows Media Video (WMV)

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
3.1 Discuss postproduction techniques	3.1.1	Export a video project to a movie file format (render)	Foundation	Listening	Listens to follow directions [1.2.6]
	3.1.2	Record video to external storage <ul style="list-style-type: none"> <li>tape</li> <li>DVD</li> <li>CD</li> </ul>	Thinking	Science	Uses equipment for postproduction tasks [1.4.23]
				Reasoning	Comprehends ideas and concepts related to post production [4.5.2]
	3.1.3	Prepare equipment for a new production <ul style="list-style-type: none"> <li>erase and pack tapes</li> <li>clean up hard drive</li> </ul>			

## Unit 4: Animation

### Hours: 10

Terminology: Animation, Frame, Frame animation, Looping, Morphing, Rendering, Transition, Tweening, Vector animation, Warping

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
4.1 Define animation	4.1.1 Describe different methods of animating graphics <ul style="list-style-type: none"> <li>• frame animation (cel)</li> <li>• vector animation (path)</li> </ul>	Foundation	Listening	Comprehends ideas and concepts related to animation [1.2.1]	
	4.1.2 Examine samples of animation in multimedia				
4.2 Identify software used to create animation	4.2.1 Examine samples of morphing and warping	Foundation	Listening	Comprehends ideas and concepts related to animation in multimedia titles [1.2.1]	
	4.2.2 Apply animated effect to objects in a multimedia project	Thinking	Creative Thinking	Uses imagination to create something new [4.1.1]	
	4.2.3 Create animated objects (i.e., text, graphics)		Knowing how to Learn	Combines ideas or information in a new way [4.1.2]	
	4.2.4 Insert an animated object into a multimedia project			Develops visuals aids to create audience interest [4.1.4]	
				Applies new knowledge and skills to graphic images [4.3.1]	
				Uses available resources to acquire new skills or improve skills [4.3.4]	

## Unit 5: Integration

### Hours: 10

Terminology: None

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do				ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge		Application		Skill Group	Skill	Description
5.1	Integrate the basic elements of multimedia into multimedia projects	5.1.1	Create multimedia projects incorporating the elements of multimedia	Thinking	Creative Thinking	Uses imagination to generate new ideas [4.1.1]  Prepares presentation based on subject research [4.1.10]
					Decision Making	Evaluates information/data to make the best decision [4.2.5]
					Seeing Things in the Mind's Eye	Visualizes a finished product [4.6.4]

# **Glossary**

## **Unit 1: Video - Preproduction**

1. Backlight – a camcorder feature that boosts the video signal power to obtain optimal image brightness; also known as “automatic gain control”
2. Footage – term used to indicate videotape created with a camcorder
3. Panning – horizontal rotation of camera
4. Preproduction – planning video
5. Script – the audio portion (narration) of a project that gives details and information about the topic; the words said aloud by the characters in the video
6. Storyboard – representation of what each screen of a multimedia project will look like and how the screens are linked; often hand-drawn sketches
7. Tilting – vertical rotation of the camera during a shot
8. Tripod – a three-legged mounting device for a camcorder
9. Video camera – a camera that takes continuous pictures by breaking down the image into a series of lines and generates a signal for display and recording
10. Videographer – a person skilled in the art or practice of making video shows or movies with a video camera
11. White balance – a camcorder adjustment in which the videographer adjusts the color responses of the camera by showing the camcorder the color “white” under the current lighting conditions or selecting the icon on the display that best describes the lighting situation (indoor, outdoor, etc.)
12. Zooming – the ability to bring an object closer or move away from an object



## Unit 2: Video - Production

1. Aspect ratio – ratio of width to height in the dimensions of a frame; i.e., frame aspect ratio of NTSC video is 4:3, some motion-picture frame sizes use a more elongated aspect ratio of 16:9
2. Chroma key – process whereby overlay cards display video on the screen and one of the colors becomes transparent; any place the transparent color appears, you see the video input
3. Codec – compression/decompression programs used to reduce the size of files
4. Cuts – two adjacent video clips with no transition; one clip is immediately replaced with another
5. Duration – setting length of clip/image
6. Fading – a dissolve to or from a background color (often black)
7. Frame – a single still image in a video or animation
8. Frame rate – the speed at which frames appear on a display, measured by *frames per second*
9. Frame size – also referred to as resolution, expressed by the horizontal and vertical dimensions, in pixels, of a frame; i.e., 640 by 480 pixels
10. Frames per second (FPS) – how many frames (or individual pictures) display in one second
11. Import – to bring information into a computer or computer program
12. Linear editing – editing in a sequential order; i.e., VHS, cassette tape
13. National Television Standard Committee (NTSC) – the standard broadcast system used in the United States and Japan
14. Nonlinear editing – not editing in a sequential order; i.e., CD, DVD
15. Phase Alternation Line (PAL) – the standard broadcast system used in Europe and Australia
16. Production – creating and editing video
17. RCA cable – cable that usually has a yellow, a red, and a white plug that is used to connect a camcorder to a VCR, DVD, or capture card on a computer
18. Render – to build a preview or project
19. Scrubbing – manual preview
20. Superimpose – layering images or video

21. Timeline – part of video editing window that displays tracks
22. Title – adding words to video
23. Transition – special effects, such as fade in and fade out, that can be set to occur between frames in an animation
24. Video capture – the process of transferring video to the computer
25. Video editing – making changes to taped footage
26. Video Home System (VHS) tape – a strip of magnetic media – usually consisting of a plastic/Mylar base, a layer of metallic particles, and a bonding agent – onto which video and audio signals can be recorded
27. Voice overlay – a voice track over music or video

## Unit 3: Video - Postproduction

1. Audio Video Interleave (AVI) – the three-character filename extension for Microsoft Windows standard video format
2. Firewire – cable, also known as IEEE-1394, that carries digital video signals, which include audio, video, and control (stop, start, etc.) signals
3. Motion Picture Experts Group (MPEG) – a file format that provides frame-to-frame compression
4. MOV – file extension for a QuickTime movie
5. Postproduction – final stages of video production
6. S-video – a video format that records a high-quality video signal on an SVHS videocassette that carries at least 400 lines of resolution but is the same size and shape as a regular VHS videocassette
7. Universal Serial Bus (USB) – an external bus standard that supports data transfer rates of 480 mbps (480 million bits per second)
8. Windows Media Video (WMV) – video file format that can be viewed in Windows Media Player

## Unit 4: Animation

1. Animation – a simulation of movement or the perception of motion created by the rapid display of a series of still images
2. Frame – a single still image in a video or animation
3. Frame animation – a type of animation that is based on the changes that occur from one frame to another; sometimes known as cel animation
4. Looping – repeating a function until a certain condition is met
5. Morphing – animation technique in which one image is transformed into another image
6. Rendering – the final step in creating a 3-D animation that involves giving objects attributes such as colors, surface textures, and degrees of transparency
7. Transition – special effects, such as “fade in” and “fade out,” that can be set to occur between frames in an animation
8. Tweening – short for in-betweening, the process of generating intermediate frames between two images to give the appearance that the first image evolves smoothly into the second image
9. Vector animation – moves an object along a predetermined path on the screen; the path could be a straight line or it could include any number of curves; often the object does not change, although it might be resized or reshaped; also known as path animation
10. Warping – a special effect that results in distortion of an image

## Unit 5: Integration

No terminology for this unit